U.S.S.R. COMPUTATIONAL MATHEMATICS AND MATHEMATICAL PHYSICS

Cover-to-cover translation of Zhurnal vychislitel'noi matematiki i matematicheskoi fiziki

LIST OF CONTENTS AND AUTHOR INDEX VOLUME 30, 1990



PERGAMON PRESS

OXFORD · NEW YORK · SEOUL · TOKYO

U.S.S.R. COMPUTATIONAL MATHEMATICS AND MATHEMATICAL PHYSICS

Cover-to-cover translation of Zhurnal vychislitel'noi matematiki i matematicheskoi fiziki Russian Original Copyright Nauka, 90 Profsoyuznaya ul., Moscow 117485

SCIENTIFIC TRANSLATION EDITOR:

R. C. GLASS, M.A., M.Sc., The City University, London

Translators: M. Capinski, R. C. Glass, Z. Lerman, D. Louvish, E. L. Short, T. J. ZASTAWNIAK and R. ZNAJEK

Publishing and Advertising Office: Pergamon Press plc, Headington Hill Hall, Oxford, OX3 0BW, U.K. Tel. (0865) 794141. Fax. (0865) 60285.

Subscription Rates
Annual Institutional Subscription Rate (1992) £935.00 (US\$1495.00) 2-year Institutional Rate (1992/93) £1776.50 (US\$2840.50) Sterling prices are definitive. U.S. dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice. Subscription rates for Japan are available on request.

Subscription enquiries from customers in America should be sent to: Pergamon Press Inc., 395 Saw Mill River Road, Elmsford, NY 10523, U.S.A., and for the remainder of the world to: Pergamon Press plc, Headington Hill Hall, Oxford OX3 0BW, U.K.

Microform Subscriptions and Back Issues Back issues of Pergamon journals, both in hard copy and on microform, are available direct from Pergamon Press offices.

Copyright @ 1992 Pergamon Press plc

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying, recording or otherwise, without permission in writing from the copyright

holder.

Photocopying information for users in the U.S.A. The Item-fee Code for this publication indicates that authorization to photocopy items for internal or personal use is granted by the copyright holder for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service provided the stated fee for copying, beat data presents of the United States Copyright Law, is paid. The appropriate remittance of \$10.00 per copy per arricle is paid directly to the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Permission for effect of the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Permission for effect of the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Permission for effect of the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Premission for effect of the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Premission for effect of the Copyright Clearance Center Inc., 27 Congress Street, Salem, MA 01970.

Premission for premission must be obtained from the publisher for such copying. The Insm-Fer Code for white publication is collected from the publisher for such copying. The Insm-Fer Code for white publishers is collected from the publisher for such copying. The Insm-Fer Code for white publishers and editorial board to see that no inaccurate or misleading data, opinion or statement appears in this journal, they wish to make it clear that the data and opinions appearing in the articles herein are the sole responsibility of the contributor or advertiser concerned. Accordingly, the publishers, the editorial board, editors and translators and their respective employees, officers and agents accept no responsibility or liability whatsoever for the consequences of any such inaccurate or misleading data, opinion or statement.

[™]The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI 239:48-1984.

VOLUME CONTENTS

VOL. 30, NO. 1		CONTENTS 1990
V. I. SUMIN	1	Translation of Number 1 The features of gradient methods for distributed optimal-control problems
S. K. ZAVRIYEV and A. G. PEREVOZCHIKOV	15	The direct Lyapunov method in investigating the attraction of trajectories of finite-difference inclusions
S. M. Aliakbarov	23	Application of the dynamic programming method to standardization problems
Yu. G. YEVTUSHENKO and V. G. ZHADAN	31	Exact auxiliary functions in optimization problems
V. D. Liseikin	43	The use of special transformations in the numerical solution of boundary-layer problems
A. B. VASIL'YEVA and A. V. PAVEL'YEV	54	On the existence of solutions of the contrast structure type
N. G. Ushakov	65	A class of non-linear integral equations
Yu. A. Eremin and A. G. Sveshnikov	74	An iterative method of quasi-solution in problems of diffraction by dielectric bodies
A. B. Samokhin	80	Investigation of problems of the diffraction of electromagnetic waves in locally non-uniform media
A. V. LAPPA	91	Weighted estimate of the Monte-Carlo method for calculating the higher moments of the additive transport characteristics of multiplying particles
L. F. YUKHNO	100	On some difference-characteristic schemes for non-one-dimensional non-stationary problems in the theory of elasticity
D. V. Denisov	107	Short Communications The use of local coordinates in optimization problems
A. V. Krestinin	110	A method for solving the system of ordinary differential equations of the quasichemical model of condensation
N. Yu. Bakayev	114	An investigation of the stability of certain two-layer difference schemes
E. N. BAIDAKOV and G. N. KUVYRKIN	118	An alternative method for the numerical solution of the integro-differential heat-conduction equation
V. A. Strizhkov	123	Analysis of transient electromagnetic processes in wire antenna systems
S. M. SHVARTIN	125	The general problem of stability analysis in linear programming
V. A. LUKIN and V. M. PSHENICHNIKOV	128	A numerical method for solving Hill's equation in problems of quantum mechanics
A. L. SAKHNOVICH	130	A method for solving diffraction problems
B. M. SHUMILOV	132	Translation of Number 2 Recursive interpolation by cubic splines with additional nodes
M. I. IGNATOV and A. B. PEVNYI	137	Reinsch's method for solving the smoothing problem in several dimensions
S. A. Yevseyeva	142	Computation of the maximum guaranteed payoff in dynamic models of conflict situations
V. N. NEFEDOV	147	Estimation of the error in convex polynomial optimization problems
V. S. IZHUTKIN and M. YU. KOKURIN	159	Reduced-direction methods with feasible points in nonlinear programmin

D. V. OFITSEROV	170	The discrete ψ -transformation method in integer programming
G. P. Panasenko	178	A numerical-asymptotic multicomponent averaging method for equations with contrasting coefficients
S. A. KASHCHENKO	186	Asymptotic behaviour of rapidly oscillating contrasting spatial structures
A. A. TIKILYAINEN	197	Gyroscopic waves in media with time-dependent flow and rotation
Yu. D. Pletner	203	On the vibrations of a two-sided disc in a stratified fluid
V. V. DYAKIN and V. YA. RAYEVSKII	213	Investigation of an equation of electrophysics
E. L. Gusev	218	"A priori" estimates in problems of the synthesis of interference coatings
F. M. Sharipov	226	Onsager reciprocal relationships for the motion of a rarified monatomic gas in an external field
B. V. GISIN	232	Short Communications Localized solutions of a certain non-linear second-order differential equation
T. I. SAVELOVA	233	A numerical algorithm for solving the Cauchy characteristic problem for ultrahyperbolic equations
Yu. 1. Khudak	238	The best single-layer brightening coating for a frequency band
V. V. VARLAMOV	241	The problem of the propagation of nonstationary acoustic waves in a relaxing medium

VOL. 30, NO. 2		CONTENTS 1990
R. P. Tarasov	1	Translation of Number 3 Numerical canonical factorization algorithms and their application
A. G. KOROTCHENKO	12	Approximately optimal algorithms for determining extrema in a certain class of functions
A. I. Kalinin	19	A method for the asymptotic solution of singularly perturbed linear terminal control problems
A. G. Perevozchikov	28	The complexity of the computation of the global extremum in a class of multi-extremum problems
D. S. DZHUMABAYEV	34	Approximation of the bounded solution of an ordinary linear differential equation by solutions of two-point boundary-value problems
Yu. M. Zabolotnov	46	An asymptotic method for quasilinear vibrational systems with an aperiodic generating solution
A. A. KOBOZEVA and L. V. MASLOVSKAYA	56	Programming a generalized Cholesky algorithm for mixed discrete analogues of elliptic boundary-value problems
S. A. SANDER	62	Chebyshev acceleration of the Schwarz alternation process
V. A. GALAKTIONOV	67	Accurate estimates for the amplitude and support of unbounded solutions of the non-linear heat-conduction equation with a source
M. A. VORONTSOV, N. I. ZHELEZNYKH and M. M. POTAPOV	74	A gradient procedure for intra-resonator control of light beams
S. A. Gabov and A. T. Sundukova	79	On an initial-boundary value problem which arises in the dynamics of a compressible stratified fluid
A. K. Ponomarenko	86	Short Communications Formulas for the approximate evaluation of integrals over a whole plane
G. K. Berikelashvili	89	The convergence in W_2^2 of the difference solution of the Dirichlet problem

D. L. KONDRAT'YEV and A. V. LOTOV	93	External estimates and construction of attainability sets for controlled systems
S. K. ZAVRIYEV and A. G. PEREVOZCHIKOV	98	The method of generalized stochastic gradient for solving minimax problems with constrained variables
S. A. GABOV and M. B. TVERSKOI	105	The flow of a heavy liquid in the presence of a periodic impressed force
L. V. MASLOVSKAYA	114	Translation of Number 4 The best possible bounds for the convergence of the semimixed finite element method for the main boundary-value problems of the theory of shallow shells in polygonal regions
B. P. KOLOBOV, ZH. L. KOROBITSYNA, A. V. PLYASUNOVA and A. G. SLEPTSOV	120	A collocation-grid method on moving grids for the numerical modelling of boundary layers
V. V. GUDKOV, A. P. MIKHAILOV and V. V. STEPANOVA	130	Localized compression regimes in a heat-conducting gas
A. N. Antonov, T. G. Elizarova, B. N. Chetverushkin and Yu. V. Sheretov	139	Numerical modelling of pulsating regimes accompanying supersonic flow round a hollow cylinder
Yu. V. Knyazikhin	145	On the solvability of plane-parallel problems in the theory of radiation transport
A. M. BISHAYEV and V. A. RYKOV	154	Variational principles of the linear kinetic theory of a gas
S. G. KARATAYEV and V. N. KOTEROV	166	A numerical method of computing supersonic flows of a viscous gas
M. M. Basko	176	The method of artificial viscosity for computing one-dimensional flows
L. M. ALVAREZ and V. V. DITKIN	183	Short Communications On the numerical solution of the Orr-Sommerfeld equation
V. N. GREBENEV	187	On the solvability of the problem of the development of a domain of turbulent homogeneous fluid
M. M. KOVALEV and A. V. MOSHCHENSKII	190	Search for the maximum upper zero of a threshold function of multivalued logic
V. V. ARISTOV, M. S. IVANOV and F. G. CHEREMISIN	193	Two methods for solving the problem of heat transfer in a rarefied gas
V. I. PINCHUKOV	196	On an implicit scheme with correction of flows for the numerical solution of Euler's equation
A. A. RAINES	198	Direct numerical integration of the Boltzmann equation for neutral gas mixtures
A. O. ALEKSEYEV, O. G. ALEKSEYEV and V. D. KISELEV	199	The use of duality to determine the branching order of variables and to estimate the bounds in the solution of the knapsack problem
V. Yu. Dubinskaya	201	Averaging of the stationary problem of heat conduction in a thin inhomogeneous plate

VOL. 30, NO. 3		CONTENTS 1990
B. ALIYEV	1	Translation of Number 5 The generalized residual principle and generalized residual method for L -pseudo-solutions
M. A. KOKOREV	8	Construction of a single-step optimal stochastic algorithm for approximating a Lipschitz function
A. N. KULIKOV and V. R. FAZYLOV	16	Convex optimization with prescribed accuracy
V. 1. PINCHUKOV	23	Monotonization of a family of implicit schemes

I. P. BOGLAYEV and V. V. SIROTKIN Numerical solution of some quasilinear singularly perturbed heatconduction equations on nonuniform grids V. A. KORNEYEV, A. G. MIKHEYEV, Comparison of two-numerical methods for solving the problem of the E. Yu. RABOTNOVA and A. S. SHAMAYEV diffraction of an E-polarized plane wave by an ideally conducting periodic surface V. V. VARLAMOV and A. V. NESTEROV 47 Asymptotic representation of the solution of the problem of the propagation of acoustic waves in a non-uniform compressible relaxing medium 1. P. BOGLAYEV Numerical solution of a quasilinear parabolic equation with a boundary Identification of a two-dimensional model of the flow of a homogeneous G. A. VIRNOVSKII and E. I. LEVITAN liquid in a porous medium YU. D. PLETNER 70 Vibrations of a flat disk at the interface between two stratified liquids S. A. GABOV and P. A. KRUTITSKII Energy characteristics of non-stationary internal waves in a vertical channel containing a stratified liquid A. A. CHARAKHCH'YAN 92 Calculation of the viscous heating of a plasma compressed by a percussion plate in a conical target Short Communications V. T. ZAKHARCHUK and N. P. SAVENKOVA Localization of the spectrum of the eigenvalue problem nonlinear in the spectral parameter 104 The multidimensional stationary phase method. The second term of the M. V. FEDORYUK asymptotic expansions V. A. ROSHCHIN, N. V. SEMENOVA and 107 A decomposition approach to the solution of some integer programming I. V. SERGIYENKO problems with inexact data A. V. DZHISHKARIANI 112 Convergence of the method of finite elements with one iteration Translation of Number 6 A. N. BUSLAYEV 117 Non-linear spectra of matrices and extremal problems Discrete approximation of extremal problems with operator inequality R. E. LEPP constraints E. P. ZHIDOV, E. G. NIKONOV and Asymptotic error bounds in Galerkin approximation for a certain class of B. N. KHOROMSKII quasipotential equations 140 The solution of systems of non-linear equations of general form K. N. BELASH V. N. NEFEDOV 145 A mathematical programming problem with a convex irregular feasible set V. Yu. BUCHNEY 154 Asymptotic behaviour of the solution of the singularly perturbed purabolic problem in the critical case YU. D. PLETNER 161 The mathematical structure of the solution of the equation $\partial^2/\partial t^2[u_{xx} - \beta^2 u] + \omega_0^2 u_{xx} = 0$ and problems connected with it G. S. KAZACHA, YA. D. MADZHAROVA and 171 One-electron solitons in two-dimensional tunnelling structures S. I. SERDYUKOVA A. A. BYKOV, A. G. SVESHNIKOV and 179 Application of the incomplete Galerkin method to solve problems of M. K. TRUBETSKOV diffraction of electromagnetic waves by a non-uniform cylinder A. S. IL'INSKII and O. M. MASLOVSKAYA 191 Variational formulation of diffraction problems V. N. Novikov 198 A method of solving Fokker-Planck kinetic equations for a plasma Yu. M. Beletskii, P. A. Voinovich, 207 Numerical modelling of transverse flow round a cylinder based on the Yu. P. Golovachyev and Euler equations E. V. TIMOPEYEV Short Communications V. L. MURASHKO and I. L. OSIPOV A method of generating an interpolating curve with piecewise sign-

- L. M. Berezanskii and L. V. Idel's

 215 Chaplygin's method for the numerical solution of differential equations with a delayed argument

 Yu. D. Shmyglevskii

 220 Viscous liquid flows that are independent of the Reynolds number
 - Letters to the Editor 224 Corrigenda

VOL. 30, NO. 4		CONTENTS 1990
V. V. Repyakh	1	Translation of Number 7 Analysis of the error of the approximate superelement method
M. B. MAMEDOV		The Pareto-optimality of Nash equilibrium in dynamic controlled systems with conflict
S. K. Zavriev	24	Convergence properties of the gradient method under conditions of variable-level interference
I. S. LITVINCHEV	32	Decomposition in extremal problems of special structure
G. B. Rubal'skii	38	A step elimination method for the dynamic optimal inventory control problem
I. A. BLATOV	47	The projection method for singularly perturbed boundary-value problems
V. R. IBRAGIMOV	57	A relationship between order and degree for a stable formula with advanced nodes
L. T. Poznyak	66	A rigorous justification and estimation of the rate of convergence for the partial domain method in two-dimensional eigenvalue problems for the Laplace operator
A. V. KALININ and S. F. MOROZOV	76	A non-linear boundary-value problem in the theory of radiation transfer
Yu. V. Shestopalov	83	Application of the method of generalized potentials to the solution of certain problems in the theory of the diffraction and propagation of waves
I. I. VOROZHTSOV and V. L. YUMASHEV	92	On the approximation properties of an implicit difference scheme for the equations of gas dynamics
A. V. Nesterov	99	Short Communications The asymptotic forms of the solution of a non-linear problem for a singularly perturbed system of diffusion-sorption equations
M. F. Kaspshitskaya, I. V. Sergienko and A. I. Stiranka	103	Some properties of discrete fuzzy sets
A. A. TRUBITSYN	107	Calculating the trajectory of a material particle in a two-dimensional (axisymmetric) conservative field
I. V. BOIKOV	110	Translation of Number 8 Optimal cubature formulae for computing many-dimensional integrals of functions in the class $Q_{r,\gamma}(\Omega,1)$
M. I. SUMIN	117	The maximum principle residual functional in optimal control theory
R. GABASOV, F. M. KIRILLOVA and E. A. KOSTINA	129	The construction of a solution of the alternative linear programming problem
M. M. POTAPOV and A. V. RAZGULIN	134	Difference methods in problems of the optimal control of the stead selfaction of light beams
Yu. G. Bulychev and S. A. Pogonyshev	143	Digital simulation of evolutionary stochastic differential equations
Yu. I. Mokin	149	An economical method of computing emission current density in vacuum lines
V. G. DUDKA, Yu. A. TUCHKIN and V. P. SHESTOPALOV	159	An iterative method for solving the problem of diffraction by a spherical segment

A. Ya. Voronov	165	The structure of the boundary layer of the plasma of the positive column of a glow discharge in electronegative gases
V. I. GRYN, A. I. MARCHENKO and V. V. URBAN	172	A numerical method for solving the radiation transport equation in planar and spherical geometry
M. N. ZAKHARENKOV	182	Special features of difference schemes for solving the two-dimensional Navier-Stokes equations, connected with the formulation of the boundary conditions on the solid surface
I. B. Petrov, A. G. Tormasov and A. S. Kholodov	191	On the use of hybrid grid-characteristic schemes for the numerical solution of three-dimensional problems in the dynamics of a deformable solid
V. G. USTYUZHANINOV	196	Computer experiments to find the minimum lower unity of a monotone Boolean function
F. P. VASIL'YEV, A. YU. IVANITSKII and V. A. MOROZOV	204	Short Communications An estimate of the rate of convergence of the discrepancy method for a linear programming problem with approximate data
D. S. ANIKONOV and I. SH. IRKEGULOV	208	A method of finding the integral characteristics of attenuation factors for transfer equations
A. R. MAIKOV, A. D. POYEZD and S. A. YAKUNIN	213	An economical method for computing unsteady temporally non-local radiation conditions for waveguide systems
K. M. ZHUMABEKOVA and V. P. SHIDLOVSKII	216	Two-dimensional non-stationary flows of a viscous fluid
M. V. REZTSOV	217	Averaging of a problem in the elastic theory of a non-symmetric layered membrane
S. I. SERGEYEV	218	Algorithms for solving a separable problem of discrete optimization

VOL. 30, NO. 5		CONTENTS 1990
		Translation of Number 9
E. N. OREL	1	Quasioptimal control search algorithms using state-space partitioning
E. K. Kostousova	8	Approximating the measurement optimization problems for a parabolic system
A. S. BULDAYEV	18	A numerical method of control optimization in delay systems for immune response modelling
A. D. POEZD and S. A. YAKUNIN	29	Discrete unsteady radiation conditions for cylindrical systems. A convergence theorem
R. R. GABDULLIN	35	Diffraction by a strip parallel to the surface of a compressible stratified liquid
V. I. GRYN	42	Determination of the absorption coefficient in the spherically symmetric case
I. S. Men'shov	54	Increasing the order of approximation of Godunov's scheme using solutions of the generalized Riemann problem
A. S. Voenovskii	66	A version of the splitting method and implicit implementation of the boundary conditions for the solutions of the Navier-Stokes equations in curvilinear coordinates
A. V. Borovskii, A. L. Galkin, V. G. Priimak and E. V. Chizhonkov	72	Methods for the simultaneous solution of the equations of gas dynamics and the kinetics of multiply-charged plasma
M. V. REZTSOV	82	Composite plates reinforced with high modulus fibres
V. V. OSTAPENKO	91	Approximation of conservation laws by high-resolution difference schemes

P. N. DENISENKO	Short Communications 100 An unsaturated method for the discretization of systems of linear differential equations unsolved with respect to derivatives
A. I. ZADORIN and V. N. IGNAT'YEV	107 A difference scheme for a non-linear singularly perturbed second-order equation
O. G. ODINTSOV and E. A. PUSHKAREV	112 Combined recovery of the quadrupole splitting distribution function and the dependence of the isomer shift using Mössbauer spectral data
V. V. CHUMAKOV	Translation of Number 10 116 Determination and properties of optimal controls for a coordinated hierarchical system in the presence of uncontrolled disturbances
G. B. Rubal'skii	124 Integer minimization of fractional-separable functions
I. L. Averbakh	133 An iterative decomposition method in single-stage stochastic integer- programming problems
A. A. DENISOV, A. V. KOLDOBA and Yu. A. POVESHCHENKO	140 Convergence of difference schemes of the reference-operator method to generalized solutions of the axisymmetric Poisson equation
V. N. BOGAYEVSKII	148 The Korteweg-De Vries, Kadomtsev-Petviashvili and Boussinesq equations. Modulation theory
A. G. SVESHNIKOV and S. T. SIMAKOV	159 Fundamental solutions and Green's formulae for families of equations arising in the theory of the oscillations of a stratified viscous liquid
Yu. D. Pletner	167 Structural properties of the solutions of the gravitational-gyroscopic wave equation and the explicit solution of a problem in the dynamics of a stratified rotating fluid
M. B. Tverskoi	178 On the stationary flow of a heavy fluid over an uneven, periodically varying bottom
I. A. VASIN and A. I. PRILEPKO	189 The solvability of the three-dimensional inverse problem for the non-linear Navier-Stokes equations
V. V. Koretskii and D. A. Lyubimov	199 A modified method of approximate factorization when calculating three- dimensional potential flows in channels
V. I. GRYN and M. K. KERIMOV	211 Integrodifferential equations for non-spherical aerosols coagulation
A. I. Zhdanov	Short Communications Optimal regularization of solutions of approximate stochastic systems of linear algebraic equations
V. A. Novikov and A. N. ROGALYEV	229 The influence of the "wrapping" effect on finding upper and lower estimates of solutions of systems of ordinary differential equations

VOL. 30, NO. 6		CONTENTS 1990
S. L. LOGUNOV	1	Translation of Number 11 Stability bounds for solutions of some conditionally well-posed problems on a set containing discontinuous functions
KH. D. IKRAMOV	9	The use of block symmetries to solve algebraic eigenvalue problems
A. M. Krot	17	Computational complexity of generalized K_N -convolutions and the fast Vandermonde transform algorithm
N. S. VASIL'YEV	26	A new approach to the numerical solution of non-linear equations
D. S. DZHUMABAYEV	32	Approximation of bounded solutions and exponential dichotomy on an axis

E. V. Zakharov, S. I. Safronov and R. P. Tarasov	44	A method for the numerical solution of integral equations in boundary value problems with finite-order Abelian symmetry groups
V. M. SVESHNIKOV and V. A. SYROVOI	54	A numerical calculation of beams of charged particles by iterations over subregions
P. A. KRUTITSKII	64	The flow of electric current from rectilinear electrodes in a magnetized semiconductor film
B. D. ABRAMOV and S. B. SHIKHOV	74	Methods of splitting by subdomains for the neutron transport equation
D. B. GUROV and T. G. ELIZAROVA	86	A method for designing algorithms to compute viscous incompressible flows
Yu. D. Pletner	93	Representation of solutions of the two-dimensional gravitational- gyroscopic wave equation by generalized Taylor and Laurent series
		Short Communications
M. V. Reztsov	103	
E. M. SHAKHOV	106	Analysis of the flow of a rarefied gas near the critical point
A. V. Shcheprov	111	A method of adapting grids
A. O. ALEKSEYEV, O. G. ALEKSEYEV and V. D. KISELEV	114	Application of the resolving multipliers of the modified simplex method in problems of integer linear programming
P. B. DUBOVSKII	116	An iterative method for solving the coagulation equation with spatially inhomogeneous velocity fields
A. V. Kaptsov and E. I. Shifrin	118	Application of the Padé approximation to the solution of dynamic problems of the theory of elasticity for a space weakened by a plane crack
M. S. Sagitov	119	Translation of Number 12 Finite splitting algorithm for the J -symmetric generalized eigenvalue problem
M. K. Kerimov and S. L. Skorokhodov	126	Some asymptotic formulae for cylindrical Bessel functions
A. R. MAIKOV, A. G. SVESHNIKOV and S. A. YAKUNIN	133	Non-local radiation conditions for the time-dependent Maxwell equations
B. V. PAL'TSEV and I. I. CHECHEL	141	The multigrid method applied to a finite-element scheme for a two-dimensional Stokes-type system
O. S. Ryzhov	146	The formation of ordered vortex structures from unstable oscillations in the boundary layer
P. I. CHUSHKIN and A. K. SHARIPOV	154	Ablation of large meteors during radiative heating
R. P. Tarasov	162	Computation of functions in the algebra of triangular Toeplitz matrices and numerical inversion of the Laplace transform
Yu. D. Shmyglevskii	167	On an inertial flow

